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CONSTRUCTION, TESTING AND TRANSFER OF POWER STATION FACILITIES

1. Compounding With an Electromagnetic Voltage Corrector as the Basic System for the Automatic Regulation of Excitation of Generators in Electric Power Stations

An experiment in adjustment and operation of compounding devices with electromagnetic voltage correctors, developed by the Institute of Electrical Engineering of the Academy of Sciences of the Ukrainian SSR, gave good working characteristics and high operating reliability for large turbo- and hydroelectric generators. Production of this type of voltage corrector will start in the plants of the Ministry of the Electrical Industry in July of this year. In accordance with MES (Ministry of Electric Power Stations) Order No 64 of 14 February 1950, the Kiev Electrical Measuring Instruments Plant, "Armset'" Trust, Glavelektrosetstroy (Main Administration for Construction of Electric Power Networks), will also undertake production of these correctors.

In view of this, the Technical Administration of MES suggested in Memorandum No 28/E of 9 May 1950 to all the Chief Engineers of the Regional Administrations and Power Combines.

a. To fit compounding apparatus with electromagnetic voltage correctors as the principal system of ARV (Automatic Regulation of Excitation) in newly installed power station generators.

b. To use, in addition to the compounding apparatus, a relay device for forced excitation (BV) to preserve operating continuity in cases where the compounding appliance is temporarily out of action.

c. For other generators fitted with electronic voltage regulators and already in operation, the use of these regulators where type uniformity permits.

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Not to use ARV with dynamoelectric amplifiers of the Amplidyne or Rototrol types in MES electric power stations since the presence of special commutator-type machines, and an induction motor requiring a separate power supply results in decreased operating reliability.

2. Instructions for Starting Operations of Steam-Electric Power Stations

The Technical Administration for Construction and Installation has issued instructions applying to the handing-over and receipt of newly constructed or enlarged steam-electric power stations administered by the Ministry of Power Stations.

The instructions give details of the two principal initial stages for stations starting operation: (1) complete trial runs and testing of equipment on a temporary basis, and (2) transfer of the station into permanent industrial operation.

When the equipment is put into temporary operation it will be subjected to preliminary inspection and testing followed by detailed testing under load. When satisfactory results have been obtained and the Testing Commission has rectified any defects, a form is filled out describing the results of the tests.

The principal points to be covered during the temporary operation, together with the expenses allowed for testing, are detailed in the first section of the instructions.

On completion of the adjustment period, during which the equipment operation is thoroughly mastered and general routines are established for economy and reliability, the station begins industrial operation. The principal points to be covered, the routine and preparation for acceptance, and the organization and work of each section of the Accepting Commission are described in detail in Part II of the instructions.

Subsequent sections give details of the materials and documents needed when taking over a steam-electric power station, and the bookkeeping required for starting industrial operation.

3. Instructions for Opening Power Transmission Lines Service

The Technical Administration for Construction and Installation has issued instructions for starting power transmission lines operation. These instructions will serve as basic guides for starting service over overhead power transmission lines with voltages between 35 and 220 kv, and are compulsory for all organizations of the Ministry of Power Stations which are concerned with their design, construction and installation.

The taking-over of completed power transmission lines is divided into two stages: (1) activation of the line under conditions of temporary operation, and (2) introduction of the line into industrial operation.

A power transmission line can be opened for temporary operation as soon as the main constructional work has been completed. The second section of the instructions contains orders covering this phase.

The line cannot be put into industrial operation until it has been built into the system with all the auxiliary equipment called for in the plans.

The organization, routine and conditions for opening a line for industrial operation are explained in the third section of the instructions.

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